

From the principle already adduced, namely, the regular and gradual elevation of this part of the continent, I should have judged from the small altitude of the beds at Punta Alta, that the formation had not been very ancient. The conclusion here arrived at, concerning the age of these fossil mammalia, is nearly the same, with that, inferred respecting those entombed in the Pampas; and it will hereafter be shown, that some of the species are common to the two districts. We may suppose, that whilst the ancient rivers of the Plata occasionally carried down the carcasses of animals existing in that country, and deposited them in the mud of the estuary; other animals inhabited the plains round the Sierra de la Ventana, and that lesser streams, acting together with the currents of a large bay, drifted their remains towards a point, where sand and shingle were accumulating into a shoal. The whole area has since been elevated: the estuary mud of the former rivers has been converted into wide and level plains; and the shoals of the ancient Bahia Blanca now form low headlands on the present coast.

The third locality, which I have to specify, is Port St. Julian, in latitude  $49^{\circ} 15'$  on the coast of Southern Patagonia. The tertiary plains of that country are modelled into a succession of broad and level terraces, which abut one above the other; and where they approach the coast, are generally cut off by a line of precipitous cliff. The whole surface is thickly covered by a bed of gravel, composed of various kinds of porphyries, and probably originating from rocks situated within the Cordillera. The lower part of the formation consists of several varieties of sandstone, and contains many fossil shells, the greater number of which are not found in a living state.

The south side of Port St. Julian is formed by a spit of flat land, of nearly a hundred feet in height; and on its surface existing species of littoral shells are abundantly scattered. The gravel is there covered (a circumstance which I did not observe in scarcely any other locality) by a thin but irregular bed of a sandy or loamy soil, which likewise fills up hollows or channels worn through it. In the largest of these channels the remains of the single fossil quadruped, which was here discovered, were embedded. The skeleton probably was at first perfect; but the sea having washed away part of the cliff, has removed many of the bones,—the remaining ones, however, still occupying their proper relative position to each other. I am inclined to attribute the origin of this earthy matter, to the

mud which might have accumulated in channels, and on the surface of the gravel, if this part of the plain had formerly existed as a harbour, such as Port St. Julian is at the present day. The Guanaco, the only large animal now inhabiting the wild plains of Patagonia, often wanders over the extensive flats, which are left dry at the head of the harbour during ebb tide: we may imagine that the fossil animal, whilst in a like manner crossing the ancient bay, fell into one of the muddy creeks, and was there buried.

I have stated that existing species of shells are scattered over the surface of this plain; namely, *Mytilus Magellanicus*; a second and undescribed species, now living on the beach; *M. edulis*; *Patella deaurata*; and on another part of the coast, but having similar geological relations, *Fusus Magellanicus*; *Voluta ancilla*; and a *Balanus*:—all these shells are among the commonest now living on this coast. Although they must have been lying exposed to the atmospheric changes for a very long period, they still partially retain their different colours. From these facts we know, with certainty, that the superficial deposit, containing the remains of the quadruped, has been *elevated* above the sea, within the recent period. From the structure of the step-like plains, which front the coast, it is certain that each step must have been modelled, subsequently to the elevation of the one standing above it; and, as the same recent shells occur on two higher plains, we may, with safety, conclude, that the earthy matter, forming the surface of this lower one, together with its embedded skeleton, was *deposited* long after the existence of the present species, still inhabitants of the sea. According, therefore, to the chronology, taken from the duration of species among the molluscs, the fossil quadruped of Port St. Julian must have been coeval, or nearly so, with those from Bahia Blanca.

Having now briefly described the principal circumstances in the geology of the three districts, to which I at first alluded, I will conclude, by observing, that the fossil mammalia of La Plata, Bahia Blanca, and Port St. Julian, must all have lived during a very modern period in the geological history of the world. It is not the proper place in this work to enter on any speculations, concerning the cause of the extinction of so many gigantic animals. I will only here add, that there is the strongest evidence against admitting the theory of a period of overwhelming violence, by which the inhabitants of the land could have been swept away, and